



SEQUENCE LISTING

<110> Karl GUEGLER et al.

<120> ISOLATED HUMAN TRANSPORTER PROTEINS,
NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS,
AND USES THEREOF

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<141> 2001-02-06

<150> 60/251,836

<151> 2000-12-08

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<170> FastSEQ for Windows Version 4.0

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<212> DNA

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| Ser | Glu | Lys | Ala | Ala | Met | Ser | Ser | Gln | Phe | Ala | Asn | Glu | Asp | Thr | Glu |
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| | | | 100 | | | | | 105 | | | | | | 110 | |
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| | | 180 | | | | | | 185 | | | | | 190 | | |
| Glu | Trp | Tyr | Leu | Asn | Gly | Asn | Tyr | Leu | Ile | Ile | Phe | Val | Ser | Val | Gly |
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| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Tyr | Lys | Lys | Phe | Gln | Ile | Pro | Cys | Pro | Leu | Pro | Val | Leu | Asp | His |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Ser | Val | Gly | Asn | Leu | Ser | Phe | Asn | Asn | Thr | Leu | Pro | Met | His | Val | Val |
| | | 260 | | | | | | 265 | | | | | 270 | | |
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| Tyr | Thr | His | Arg | Asn | Pro | Ala | Gly | Leu | Asp | Glu | Asn | Gln | Ala | Lys | Gly |
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| Ser | Leu | His | Asp | Ser | Gly | Val | Glu | Tyr | Glu | Ala | His | Ser | Asp | Asp | Lys |
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| Cys | Glu | Pro | Lys | Tyr | Phe | Val | Phe | Asn | Ser | Arg | Thr | Ala | Tyr | Ala | Ile |
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| Phe | Gly | Tyr | Leu | Thr | Phe | Tyr | Gly | Glu | Val | Glu | Asp | Glu | Leu | Leu | His |

| | | | | | | |
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| Pro Ile Arg Thr Ser Val Ile Thr Leu Leu Phe Pro Lys Arg Pro Phe | | | | | | |
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| Ser Trp Ile Arg His Phe Leu Ile Ala Ala Val Leu Ile Ala Leu Asn | | | | | | |
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| Asn Val Leu Val Ile Leu Val Pro Thr Ile Lys Tyr Ile Phe Gly Phe | | | | | | |
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| Phe Tyr Leu Lys Leu Val Lys Lys Glu Thr Phe Arg Ser Pro Gln Lys | | | | | | |
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| Val Gly Ala Leu Ile Phe Leu Val Val Gly Ile Phe Phe Met Ile Gly | | | | | | |
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| Ser Met Ala Leu Ile Ile Ile Asp Trp Ile Tyr Asp Pro Pro Asn Ser | | | | | | |
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| tgtgtctttc | ttatatgtag | gattaggagg | tttaagtatg | tgataaaatg | taaggcctct | 28740 |
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| ttttctgtc | ccttgat | taataatcac | agggtattcc | atcatcttgg | tgtactaaat | 29040 |

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| aattgtacta | agtatggttt | ctgtgctcct | aacagagtct | ctctgaatta | caggctttta | 29280 |
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| agatgaaaat | tttattttct | tatttcattt | ataagatggc | tcaatgtatt | gggaggcttc | 31260 |
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| tataggtagg | actggatcat | ctaaccaaga | tgcaaaaaaa | aaaaaacaaa | aaaacaaaaa | 32340 |
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 ttaaaacact gtgtgctatt tttttaaaatt ctgagaactg ctttctttat ttctagacaa 180
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 aatgactatc agtgtatatt tgaacttgta attcttattt tttccccatt cctcttaact 300
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 cttttatatt cctttataat gtttttattc tgtgaaagtt attctcttat tttgaatggt 540
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 tctttcatgt ccaattaaat taaagcagta attttctttc tagttattgc tagtagagac 180
 actggtagat tctgccttgg tagaccttc tctgtcaaca atttactttt gtcttccttt 240

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|-------------|------------|------------|------------|------------|------------|-----|
| cttttaaaac | atgtatccca | ctcacaaata | cctaaatttc | cttgaagact | gctgccatgt | 300 |
| yttaagattt | cttttttttt | ccatagtgc | tagtaaaacc | tgccattttc | attatacata | 360 |
| ggcaactctat | aaatatctgc | taatttagca | attattagta | atttcctttc | ttctcttcca | 420 |
| tttcttcctt | tcttgtattg | ggtaaaggaa | catttcagga | tttgcttatg | taaagttttc | 480 |
| aggagtttct | ttccttcctc | ccttttacag | agagcataca | aaatgtagat | gattcatatt | 540 |
| cacttatttc | atttaaataa | aattataatg | atgtatgttg | tgttctgttt | gcagaacaga | 600 |
| g | | | | | | 601 |

<210> 26
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| tacttttgtc | ttcctttctt | ttaaaacatg | tatcccactc | acaaatacct | aaatttcctt | 120 |
| gaagactgct | gccatgtttt | aagatttctt | tttttttcca | tagtgactag | taaaacctgc | 180 |
| catttttcatt | atacataggc | actctataaa | tatctgctaa | tttagcaatt | attagtaatt | 240 |
| tcctttcttc | tcttccattt | cttcctttct | tgtattgggt | aaaggaacat | ttcaggattt | 300 |
| kccttatgtaa | agttttcagg | agtttctttc | cttcctccct | tttacagaga | gcatacaaaa | 360 |
| tgtagatgat | tcataattcac | ttatttcatt | taaataaaaat | tataatgatg | tatgttgtgt | 420 |
| tctgtttgca | gaacagagtg | ttctgaacat | caacacaaaag | tggaagaacc | ttaagctgaa | 480 |
| ggtacagtat | attatattaca | ctgaaggggc | ttgtgtgtgg | acaagaaagc | gctgacagct | 540 |
| caaatggatc | ccatggaact | gagaaatgtc | aacatcgaac | cagatgatga | gagcagcagt | 600 |
| g | | | | | | 601 |

<210> 27
 <211> 601
 <212> DNA
 <213> Homo Sapiens

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| gtttcgtgtg | ctgtttctat | ctacatctca | tactgttttc | tattctcaaa | aagtaaccct | 60 |
| gtcatcctct | ttcctctcca | gattattttc | aggattagct | tctgttataa | aaaatagctt | 120 |
| gtacagatct | cctacaataa | ttattttcta | ttttatttct | aaggtttatt | tattttattta | 180 |
| ttgagacaga | cagagtttca | ctcttggtgg | ccatgctgga | gtgcaatgg | gcaatctcgg | 240 |
| ctcactgcaa | cctctgcctc | ccaggttcaa | gcgattctcc | tgcttcagcc | tcctgagtag | 300 |
| ytgggattac | agggcctgc | caccacactc | ggctaacttt | ttgtatttct | agtagagacg | 360 |
| aagtttcacc | atgttggtcc | ggctggtcct | gaactcctga | cctcaagtta | tccacccacc | 420 |
| tcagcctccc | aaagtgtctg | gattacaggc | gtgagccact | gtgcctggcc | tctaggatta | 480 |
| tattaataga | acaatcttca | attattttat | ctttctttat | ctttcttttc | atgtaggaaa | 540 |
| tgtcctaaaa | ttttcaaacc | ctcaatttga | aagcactttt | aaaatcatac | atagtcgagc | 600 |
| a | | | | | | 601 |

<210> 28
 <211> 601
 <212> DNA
 <213> Homo Sapiens

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| tttctagtag | agacgaagtt | tcaccatgtt | ggccaggctg | gtcttgaact | cctgacctca | 120 |
| agttatccac | ccacctcagc | ctcccaaagt | gctgggatta | caggcgtgag | ccactgtgcc | 180 |
| tggcctctag | gattatatta | atagaacaat | cttcaattat | tttatctttc | tttatctttc | 240 |
| ttttcatgta | ggaaatgtcc | taaaattttc | aaacctcaa | tttgaaagca | cttttaaaat | 300 |
| yatacatagt | cgagcatttt | atataaaaac | aactaaaaag | tctgtgacat | tttgcagtat | 360 |
| aaaaatgcaa | tggcagcagc | aggccttatt | aattgagcct | cttggaatg | tggctgggtcc | 420 |

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|------------|------------|------------|------------|------------|------------|-----|
| taggtccgta | gcctcaaagg | ccctggcttg | taactgcagg | agctgaccag | cacagctcta | 480 |
| taaccaagtt | gtacatcttc | tagcctgtgt | ccaagaaaac | cagaatcaca | acgctctgtg | 540 |
| gatagtgaca | tcttaaagtt | ttctttccct | cccaactctt | ttgccagttc | attgaattgc | 600 |
| t | | | | | | 601 |

<210> 29
 <211> 601
 <212> DNA
 <213> Homo Sapiens

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| tcacacagct | atgtgagggc | taagcatcag | gactataaat | atgtgtattg | tgtagtgct | 120 |
| ttgattgaac | tcttttatgt | ataatattct | tcagctgaat | gggtttttat | atcaacttta | 180 |
| cttttatata | agccatggtt | tgaaataaac | taggatttta | ataatctgaa | ttttaatagc | 240 |
| tatgtatgta | gtcatatatt | tgtatgcttt | tgtaatgtgc | ttacctctaa | gacaaaaaaaa | 300 |
| setgcctttc | cttattaatt | atacatacca | ttaaaatgaa | ttaggaagtt | acagatcact | 360 |
| gatgaataga | aataggaaaa | acttccccca | atccccacgt | catagatcat | cttcatgaga | 420 |
| gaagaatggt | ccacttttta | aaatgagggc | ctcatttttag | gcttataaac | acttagcaga | 480 |
| tgaatttggt | cagaacaatt | aaatcactaa | acatcatggg | gtgtgttttg | tgtgtctaag | 540 |
| tagcccagac | tggattaagc | tttctctctt | aatttatagc | aagtgcacac | gtatttttaa | 600 |
| g | | | | | | 601 |

<210> 30
 <211> 601
 <212> DNA
 <213> Homo Sapiens

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| ttttagtagt | tgatttcatt | gggaattacc | aagggattag | atcaattgtg | gggaaagtgt | 120 |
| atttttttaa | aataaacaaa | gataaagatt | ttttttctga | attccaggta | aaaggcagca | 180 |
| ttgctcctcc | atattattacg | tagatgcttc | tatcaacatt | cttatttttg | tgctccaaat | 240 |
| cttggaattg | gaaaaatacc | aatccgtata | aacataaaga | aaccatacat | gcatgtgggg | 300 |
| rtcctaacac | cagaaatgac | tctgaatgca | aaaaaaaaaa | aaaaaaaaaa | aggggaatttt | 360 |
| cgtgccccat | ccttagcttt | ctctgctttc | tctattatat | atgcaactgc | ctgcccctct | 420 |
| atcttacaaa | gtacttcgta | atctaattgca | caggatcagc | agtaaatgcag | ctcagactgc | 480 |
| atgctttcgc | ctttggattc | ctagatttca | gattaagggt | tagtcaggct | attgaatagc | 540 |
| ccttcaattc | taagtgtctga | tgtgaatatc | atgcaaatat | gatgtacata | ttcccatgtg | 600 |
| c | | | | | | 601 |

<210> 31
 <211> 601
 <212> DNA
 <213> Homo Sapiens

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| attgggaatt | accaagggat | tagatcaatt | gtggggaaag | tgtatttttt | aaaaataaac | 120 |
| aaagataaag | attttttttc | tgaattccag | gtaaaaggca | gcattgctcc | tccattttatt | 180 |
| acgtagatgc | ttctatcaac | attcttattt | ttgtgctcca | aatcttggtt | ttggaaaaaat | 240 |
| accaatccgt | ataaacataa | agaaaccata | catgcatgtg | gggatccctaa | caccagaaat | 300 |
| ractctgaat | gcaaaaaaaaa | aaaaaaaaaa | aaaaggggaat | tttcgtgccc | catccttagc | 360 |
| tttctctgct | ttctctatta | tatatgcaac | tgctgcccc | tctatcttac | aaagtacttc | 420 |
| gtaatcta | gcacaggatc | agcagtaatg | cagctcagac | tgcatgcttt | cgcctttgga | 480 |
| ttcctagatt | tcagattaag | gtttagtcag | gctattgaat | agcccttcaa | ttctaagtgc | 540 |
| tgatgtgaat | atcatgcaaa | tatgatgtac | atattcccat | gtgctgagta | agtagatgta | 600 |

<210> 32
 <211> 601
 <212> DNA
 <213> Homo Sapiens

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<210> 33
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 ctttctctgc tttctctatt atatatgcaa ctgcctgccc ctctatctta caaagtactt 180
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 attoctagat ttcagattaa ggtttagtca ggctattgaa tagcccttca attctaagtg 300
 ytgatgtgaa tatcatgcaa atatgatgta catattccca tgtgctgagt aagtagatgt 360
 agcatttgc t aatgttgcta tacatttagc atctaagtta tgaaccagat tctaccactg 420
 ggtaacatta aaaaaaagtt agggacttca ggtatgtaaa atatagcaaa ttctatttct 480
 acgactttta agggatgtg tagagttctg aaaagaattt ctgagcctcc cccaaatcca 540
 catacttttg gaaagctgat gattgaaaag attaatgtga tcctttattg taacatctaa 600
 c 601

<210> 34
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 34
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 tcttttgggc ttataatttc tatatgatgt ttatttacat gtttgagact ccagcatgga 120
 attatatgac aaaaatattt tagtcattaa aacaatctct ttaacaaggc tattttatct 180
 ttgattgtag ggtctttgat ttatgaaaaa ttaggagaaa aggcatttgg atggccggga 240
 aaaattggag cttttgtttc cattacaatg cagaacattg gaggtaaggg gatatacttt 300
 ycaatggatc ccataaactt tctatagcgt gttcaataaa taagaaaact tatggcaata 360
 aacaggcact ttagatacag aaaaattgct acttatagtt cttaaatttt aaaatgatag 420
 tttcttaaat aggtttgtgt cctgctttta ttaaaaacag caatatctaa gaatgaaata 480
 acatataaaa ccttgccaat tgaattctag aattaaaaa taaaataaaa gctttcttga 540
 tttttaatgt tattatagca tgaattatta ctcttaaaaa ttgaagaatt tgtgcttata 600
 t 601

<210> 35

<211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 35
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 accctgccaa ttgaattcta gaattaaaaat ataaaaataaa agctttcttg atttttaatg 180
 ttattatagc atgaattatt actcttaaaa attgaagaat ttgtgcttat atctgtcatt 240
 gacaaaacag ttgacgtttt ctatgtgtga ctgagttcga tttactaaac tgaaaagtgg 300
 ktgtctgggg gaacatagcc aaatgctgtg gtccttgaaa cgcagcctgc actgagccag 360
 cccactagac agtgtctctg gaagtttact aaggcaaaaag tctggctagg catcaaatgc 420
 actataaacc ccggtttggtt gattctatgg attcttataa ttcccactga attatcattt 480
 ccagtgtagg acctagaaat atatatatat atttttaaca atgttctctc gttggtgtgt 540
 ttgcccacca gtttcatact gtttctgttg tgtctttggc cctcagaagg catccaaacc 600
 c 601

<210> 36
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<220>
 <221> variation
 <222> (301)...(301)
 <223> T may be either present or absent

<400> 36
 gactattgca gtagtcttct aactgggtctt cctggcttga gtttccctg ctctcagata 60
 aactctaatt tggtctccag ataaactttc tcaaatttga gtctgtttct acttttgctg 120
 tgcataaaat tcttcagcat gcctttatta ttttcaagga aaaacttaaa ctcataggac 180
 tgacacaaga tcttcgtcta gttcttctgc tcaatctttc taaactttcc tagcaatgcc 240
 catatctatc tatctttatc tatctatcta tctatctatc tatctatcta tctatctatc 300
 tatcatctat caatttatcc atcatctata ccctacatgt cctgtgtcaa accataacaa 360
 attatattta ttcccctaac agtactatct taatatcttt aaaaatcatc catgccttct 420
 tttcacaggc tactttctcc ccttgactgt ctctcaaagt cctccaacct taacacacac 480
 gcacacacac acacacacac acacacacac acacacacat tttctctctc actctgctca 540
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 t 601

<210> 37
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<220>
 <221> variation
 <222> (301)...(301)
 <223> A may be either present or absent

<400> 37
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 ctaatttggt ctccagataa actttctcaa atttgagtct gtttctactt ttgtcgtgca 120
 taaaattctt cagcatgcct ttattatttt caaggaaaaa cttaaactca ttggactgac 180
 acaagatctt cgtctagttc ttctgctcaa tctttctaaa ctttcttagc aatgcccata 240
 tctatctatc tttatctatc tatctatcta tctatctatc tatctatcta tctatctatc 300
 atctatcaat ttatccatca tctataccct acatgtctct tgtcaaacca taacaaatta 360

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tatttattcc cctaacagta ctattttaat atttttaaaa atcatccatg ctttcttttc 420
acaggetact ttctcccctt gactgtctct caaagtcttc caaccctaac acacacgcac 480
acacacacac acacacacac acacacacac acacattttc tctctcactc tgctcacctg 540
gtctattgct cctctagact ggtaaatact agttctcttg ggctctcatg gtccctgttg 600
t                                                                 601

```

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<210> 38
<211> 601
<212> DNA
<213> Homo Sapiens

```

```

<220>
<221> variation
<222> (301)...(301)
<223> T may be either present or absent

```

```

<400> 38
gcagtagtct tctaactggg cttcctggct tgagtttccc ctgctctcag ataaactcta 60
atttgttctc cagataaact ttctcaaatt tgagtctgtt tctacttttg tcgtgcataa 120
aattcttcag catgccttta ttattttcaa ggaaaaactt aaactcattg gactgacaca 180
agatcttcgt ctagttcttc tgctcaatct ttctaaactt tcctagcaat gcccatatct 240
atctatcttt atctatctat ctatctatct atctatctat ctatctatct atctatcatc 300
tatcaattta tccatcatct ataccctaca tgtcctgtgt caaaccataa caaattatat 360
ttatcccctt aacagtacta ttttaaatatt tttaaaaatc atccatgcct tcttttcaca 420
ggctactttc tccccttgac tgtctctcaa agtctctcaa ccctaacaca cagcacacac 480
cacacacaca cacacacaca cacacacaca cattttctct ctcactctgc tcacctgggc 540
tattgctcct ctagactggg aaatactagt tcctctgggc tctcatgggc ctgtttgtat 600
c                                                                 601

```

```

<210> 39
<211> 601
<212> DNA
<213> Homo Sapiens

```

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<220>
<221> variation
<222> (301)...(301)
<223> C may be either present or absent

```

```

<400> 39
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ccatatctat ctatctttat ctatctatct atctatctat ctatctatct atctatctat 120
ctatcatcta tcaattttat catcatctat accctacatg tcctgtgtca aaccataaca 180
aattatattt attcccctaa cagtactatt ttaatatatt taaaaatcat ccatgccttc 240
ttttcacagg ctactttctc ccttgactg tctctcaaag tcctccaacc ctaacacaca 300
cgcacacaca cacacacaca cacacacaca cacacacaca ttttctctct cactctgctc 360
acctgggtcta ttgctcctct agactggtaa atactagttc ctctgggctc tcatggctct 420
gtttgtatct agtatgttac tgttttctaa aggatatatt aaaacacttg agtagagaat 480
aagcttttgg agtctgatgg acctgaattt gagtctgttt ctgtcactat ctgtgaactt 540
gggaagatca ctgtactcct ttgtctgatt ttttcatgta taaaaattac cttacaaagg 600
c                                                                 601

```

```

<210> 40
<211> 601
<212> DNA
<213> Homo Sapiens

```

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<400> 40
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tatctatcta tctttatcta tctatctatc tatctatcta tctatctatc tatctatcta 120
tcatctatca atttatccat catctatacc ctacatgtcc tgtgtcaaac cataacaaat 180
tatattttatt cccctaacag tactatttta atatttttaa aaatcatcca tgccttcttt 240
tcacaggcta ctttctcccc ttgactgtct ctcaaagtcc tccaacccta acacacacgc 300
rcacacacac acacacacac acacacacac acacacattt tctctctcac tctgtctcacc 360
tgggtctattg ctctcttaga ctggtaaata ctagtctctc tgggctctca tggctctgtt 420
tgtatctagt atgttactgt tttctaaagg atatttttaa acacttgagt agagaataag 480
cttttgaggat ctgatggacc tgaatttgag tctgtttctg tcactatctg tgaacttggg 540
aagatcactg tactcctttg tctgattttt tcatgtataa aaattacctt acaaaggcta 600
t                                                                                      601

```

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<210> 41
<211> 601
<212> DNA
<213> Homo Sapiens

```

```

<400> 41
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cacacacaca cacattttct ctctcactct gctcacctgg tctattgctc ctctagactg 120
gtaaatacta gttcctctgg gctctcatgg tctgtttgt atctagtatg ttactgtttt 180
ctaaaggata ttttaaaaca cttgagtaga gaataagctt ttggagtctg atggacctga 240
atgtgagtct gtttctgtca ctatctgtga acttgggaag atcactgtac tcctttgtct 300
ratTTTTTca tgtataaaaa ttaccttaca aaggctattg tgaggatgaa ataaggtaac 360
atatggcaca taataagtgt tctgtatatg cttctctcct ccctgggtct ctgcttccat 420
atccatgtct ctggagttgc ctgaattatt ttttaaatag gcatttaaaa aattataaaa 480
caaatatatg atgattgtga aaaactaaaa cactgcataa atatataaat taccaagaaa 540
agtttatgtc agtcactctc agaaataact actcataggt tttcccctat gcctaattca 600
a                                                                                      601

```

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<210> 42
<211> 601
<212> DNA
<213> Homo Sapiens

```

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<400> 42
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gcataagcat aattaaccct ggactcaaga agttgagtgg cagcacctca gctgtgggtc 120
aaagcatagc cactactacg cttctaaaca atggaataaa gtataaagcg gtctctcagt 180
caagcctcac acaggtaaga ggcgtgactt taaggagta agatgaaata tcgtaacatc 240
acccagaaaa taatgctctc actttggtta ctttatttga ttagttgata tttggcataa 300
sagaaatcac ttgtatttct ctatttaaca actctacatt tagaacactt aattttctca 360
atccccataa aaattaacat ttactgcaga tgttttcaca ttaacagatt aatgtctgga 420
tcattctgaa tttttgaaga ccaaacatgt taacatcact gacatcactg aaaaccagca 480
attaatagct gtaacattga atggtaacct accaagccag ctaatcagaa atatctcctg 540
tgttcacact ctgtaagatt tagcttttagc caaggtcttt gcaaagatta accaaataat 600
g                                                                                      601

```

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<210> 43
<211> 601
<212> DNA
<213> Homo Sapiens

```

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<220>
<221> variation
<222> (301)...(301)

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<223> G may be either present or absent

<400> 43

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tgagttctat ttttaactga atcttttggc catgtgtcaa caaattaacg ttatccttca 60
ccaaatgggt gggcttgaaa aaggcgtgat gcataaatat ttacagttgt aggcaaaatt 120
gtaatgttat gtatatgaat acatattcat tttttcaggg agaaggcttg tagatttcat 180
caagaaatct ttcacaagag tagataatca ttcattgtatc acttacctag atgctcatga 240
aattttgcca ctttatataa ttccttagtt agccaaaagg agagtaagat gaagaggggg 300
gaaaaaaaaa acttctttga caaagatgga gagaagctgt catctcttgt attcttttat 360
caatccagga agcctttggg tttgacaata agtggctctga gacttttgtg actcctcaga 420
taggtcccgg aggactagat tgggtgccc atgcagaaaa ccagagggga tatattgact 480
ctgcagatct gccctttgat tctgccatct ctcagctggc ccatgccttt tgttgccaga 540
ctactgcccc agttatagac actaacacag gcacactgag tatgggctat gttgatttat 600
a 601
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<210> 44

<211> 601

<212> DNA

<213> Homo Sapiens

<220>

<221> variation

<222> (301)...(301)

<223> A may be either present or absent

<400> 44

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tgggtgggct tgaaaaaggc gtgatgcata aatatttaca gttgtaggca aaattgtaat 120
gttatgtata tgaatacata ttcatttttt cagggagaag gcttgtagat ttcatacaaga 180
aatctttcac aagagtagat aatcattcat gtatcactta cctagatgct catgaaattt 240
tgccacttta tataattcct tagttagcca aaaggagagt aagatgaaga ggggggaaaa 300
aaaaaacttc tttgacaaa atggagagaa gctgtcatct cttgtattct tttatcaatc 360
caggaagcct ttgggtttga caataagtgg tctgagactt tgtgtactcc tcagataggt 420
cccgaggagc tagattgggt gccatctgca gaaaaccaga ggggatatat tgactctgca 480
gatctgccct ttgattctgc catctctcag ctggcccatg ccttttggtg ccagactact 540
gccaagtta tagacactaa cacaggcaca ctgagtatgg gctatggtga tttataacta 600
a 601
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<210> 45

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 45

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aggcgtgatg cataaatatt tacagttgta ggcaaaattg taatgttatg tatatgaata 60
catattcatt ttttcagggg gaaggcttgt agatttcac aagaaatctt tcacaagagt 120
agataatcat tcatgtatca cttacctaga tgctcatgaa attttgccac tttatataat 180
tccttagtta gccaaaagga gagtaagatg aagagggggg aaaaaaaaaa cttctttgac 240
aaagatggag agaagctgtc atctcttgta ttcttttatc aatccaggaa gcctttgggt 300
ytgacaataa gtggctctgag actttgtgta ctctcagat aggtcccga ggactagatt 360
ggtgcccatc tgcagaaaac cagaggggat atattgactc tgcagatctg ccctttgatt 420
ctgccatctc tcagctggcc catgcctttt gttgccagac tactgcccga gttatagaca 480
ctaacacagg cacactgagt atgggctatg ttgatttata actaatgagg gcagaacctt 540
agaactgcag cttcactgta aactttggag caggatttaa cacagaatca gccctgatac 600
t 601
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<210> 46

<211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 46
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 ttcattcttac atatccaaa tgcataaact tgcttgcatt tgacttcagt actgtccaca 120
 ccattaagct gtcacatttt ccatttttagc aatgtcaagc tacctcttta tcattaaata 180
 tgaactacct gaagtaatca gagcattcat gggacttgaa gaaaatactg ggtatgtctt 240
 atgctccctc tgtgacatca agtgactcat tctacttggg cttttctgat tctaataatcc 300
 ytgtctctca cttctagaga atggtaacct aatggcaact acctcatcat atttgtgtct 360
 gttggaatta ttcttccact ttcgtctctt aaaaatttag gtaaagatat tttctaactg 420
 gaaatatttt tatttttatt tcacatttaa atagggttagc taattgtaga tgccatattc 480
 accttccaaa atgcttcttc taacttctag gttatcttgg ctataccagt ggattttctc 540
 ttacctgcat ggtgtttttt gttagtgtgg taagtgatgt gatgacatga tccttgcagg 600
 t 601

<210> 47
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 47
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 aaaagagcag ctacgattta aagatagttg aggtagaata tcaaagctac tactaatggt 180
 ttggtctagg cacactgggt atatatgggg aaaaaaggaa aacttcaagc aggaacatga 240
 caataatctg gcatttagaa cagcagagga gagtcccaga tgagaaacaa gaaggctata 300
 yccatattca catgaatcag ccattctctc ttacacattc caccattaa gagaggacaa 360
 gaacagtggg attaaagaag aaatcctcct ctctaggccc ctgacaaaag agggaatttc 420
 ttgcactatc atgaatgcca aaatttataa agcatttccc caaagaggta aaggagaagg 480
 aaaaaaagtt ttgaagacct atgtcacctt agtttgaaga aataaggaaa tgatcatctt 540
 tctcatggaa gggcatgaaa gaggggtggga aggattcttg caaaatattg tcctgttaac 600
 t 601

<210> 48
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 48
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 gaaacacagt ttatagcttc ctcttcagag aaaatatgta ctccatccac tcttcagtaa 120
 catgctttta tcagaaagg ggaatcagc ccaccacagc actaccttat cttctttctc 180
 tcctttctct ccaccataat ggttcagggg aggggttcat ggcagggtga caaggagtcg 240
 atggttgtaa taattttggc aggtgttggg aattttaaatt tgaattttgt tcggaagaaa 300
 ygatgtcagc tggactagaa atgaaaacac ccatgacgac caaaacttat ggtagggggc 360
 agcctcgata agccagtgat gtcatttata gtcagcacct aacccttgtc tagaacacat 420
 tcattacaag agatgtgtca atatctgtcc tttgttgtct tatttgtaca atagagtcac 480
 tggctagaaa atcttgtttc ttccagctga tgggtctatg ttcatattga ttcttttccc 540
 tttgaagttg ttgatatttg cttgggaaca aaggatatga actcattata gctgttttcc 600
 t 601

<210> 49
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 49

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caatatctgt cctttgttgt cttatttgta caatagagtc actggctaga aaatcttggt 180
tcttcagct gatggctctat gggttcatttg tattcttttc cctttgaagt tgttgatatt 240
tgcttgggaa caaaggatat gaactcatta tagctgtttt cctctttcct ttaagggagg 300
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gaagcctgac aattgatctt tggcagccag gttccttcta gaatggtttt cagaagcttt 540
tcaggtagtc tggactcctg gcagtagtac tttgctgact ctactagggt cttttcctca 600
t 601
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<210> 50

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 50

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agttgttgat atttgcttgg gaacaaagga tatgaactca ttatagctgt ttctctctt 180
cctttaaggg aggatattat ataataattc tcaacttctt taatctagac atcagtaacc 240
tcagtcttca ttctcactaa atagcaaaac tttccccata aattctgatt tacctcataa 300
raaatttcag aacactttca agtattttga tgtctttgat ttactttgaa aattacatgt 360
agcagttact ccagaagcct gacaattgat ctttggcagc caggttcctt ctagaatggg 420
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gttcttttcc tcatttaaag tcatctcatt atgaaatgca aaagctttct atgttaggag 540
cctgtttcat ctttatgtta attatattct tattcagtg gcaagcttac tgacctacgt 600
g 601
```

<210> 51

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 51

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cactaaatag caaaactttc cccataaatt ctgatttacc tcataaaaaa tttcagaaca 120
ctttcaagta ttttgatgtc tttgatttac tttgaaaatt acatgtagca gttactccag 180
aagcctgaca attgatcttt ggcagccagg ttccttctag aatggttttc agaagctttt 240
caggtagtct ggactcctgg cagtagtact ttgctgactc tactaggttc ttttcctcat 300
ytaaagtcac ctcattatga aatgcaaaag ctttctatgt taggagcctg tttcatcttt 360
atgttaatta tattcttatt cagtgggcaa gcttactgac ctacgtgaaa tagactgttc 420
ctcttctagg gaaatgattg tttttaagac tgaaggacta gtgtttaaga aaaatggaaa 480
tgaatcctca ttagctctct aagacaaatt taaatcagct ataagtttat gtactaaata 540
tgtcttcatg attagcaata tagatatact tttttattat tattttcatt ttgaaaagtg 600
a 601
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<210> 52

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 52

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tcattctcac taaatagcaa aactttcccc ataaattctg atttacctca taaaaaattt 60
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cagaacactt tcaagtatct tgatgtcttt gatttacttt gaaaattaca tgtagcagtt 120
actccagaag cctgacaatt gatctttggc agccagggtc cttctagaat gggtttcaga 180
agcttttcag gtagtctgga ctcttggcag tagtactttg ctgactctac taggttcttt 240
tcttcattta aagtcattct attatgaaat gcaaaagctt tctatggttag gagcctgttt 300
satctttatg ttaattatat tcttattcag tgggcaagct tactgacctc cgtgaaatag 360
actgttctct ttctagggaa atgattgttt ttaagactga aggactagtg tttaagaaaa 420
atggaaatga atcttcatta gctctctaag acaaatttaa atcagctata agtttatgta 480
ctaaatatgt cttcatgatt agcaatatag atatactttt ttattattat tttcattttg 540
aaaagtgatt tttttttgta agtttaaaaa acaaagcttg gtgttctttc tttttccagt 600
c 601

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<210> 53
 <211> 601
 <212> DNA
 <213> Homo Sapiens

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<400> 53
cagaagcttt tcaggtagtc tggactcctg gcagtagtac tttgctgact ctactaggtt 60
cttttctcca tttaaagtca tctcattatg aaatgcaaaa gctttctatg ttagggagcct 120
gtttcatctt tatgttaatt atattcttat tcagtgggca agcttactga cctacgtgaa 180
atagactggt cctcttctag ggaaatgatt gtttttaaga ctgaaggact agtgtttaag 240
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ygtactaaat atgtcttcat gattagcaat atagatatac ttttttatta ttattttcat 360
tttgaaaagt gatttttttt tgtaagttta aaaaacaaag cttggtgttc tttctttttc 420
cagtcgggtc cggagaaaaa tgcaaacggt gtcaaatatt tccatcacgg ggatgcttgt 480
catgtacctg cttgccgccc tctttgggta cctaaccctc tatggttagt cactctgaaa 540
gtcattctct atatgcaaat ccttgtagg ctggtccttg acctgggtag gtatgatttt 600
t 601

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<210> 54
 <211> 601
 <212> DNA
 <213> Homo Sapiens

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<400> 54
actcctggca gtagtacttt gctgactcta ctaggttctt ttcttcattt aaagtcatct 60
cattatgaaa tgcaaaagct ttctatgtta ggagcctgtt tcatctttat gttaattata 120
ttcttattca gtgggcaagc ttactgacct acgtgaaata gactgttctt cttctagggg 180
aatgattggt ttaagactg aaggactagt gtttaagaaa aatggaaatg aatcctcatt 240
agctctctaa gacaaattta atcagctat aagtttatgt actaaatatg tcttcatgat 300
kagcaatata gatatacttt tttattatta ttttcatttt gaaaagtgat tttttttgt 360
aagtttaaaa acaaaagctt ggtgttcttt cttttccag tcggtcccgg agaaaaatgc 420
aaacgggtgc aaatatttcc atcacgggga tgcttgctat gtacctgctt gccgccctct 480
ttgggttacct aaccttctat ggtaggtcac tctgaaagtc attctctata tgcaaatcct 540
tggttaggctg gtccttgacc tgggtaggta tgatttttaa aaattgcctt ctataagcat 600
g 601

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<210> 55
 <211> 601
 <212> DNA
 <213> Homo Sapiens

```

<400> 55
ggatgatttt ttaaaaattg ctttctataa gcatgctcta tagatgacac atattcaatt 60
aatatactat tttagttttg tcaattgacc tgaggaaatg gggcctgatt cagcctggct 120
aacaagttac aagaatttgt gaattaacac ctattttata aaaaatatcc ctcaaacaaa 180
attattttcc tctagggata gatgatattt ctctggctag actccatagt ccaactcagg 240

```

| | | | | | | |
|------------|------------|------------|------------|-------------|------------|-----|
| ctacaagtga | tgagaatgaa | tccacttgca | tgtgataaag | ctcctttgat | ggaattatta | 300 |
| mctgccacac | aaatagcagg | gaaactgcc | ggtcctcaag | tttgaatttg | cctcctcttt | 360 |
| accagtcaag | tcaaactctg | gagcttggga | ctttaggtta | aattttctgac | atatcccatt | 420 |
| ctattttgtt | atactaaatg | atttcctaag | aaagaggaca | tgacagaatt | tccttcaatc | 480 |
| taagaatgca | ccacaaaaaa | aaagtgacta | tggccacatt | agattatgcc | tgcaacattt | 540 |
| cctctctggc | atcttaacag | ttcacaaagg | gagtaggatt | gtactccttc | catgaagtgt | 600 |
| g | | | | | | 601 |

<210> 56
 <211> 601
 <212> DNA
 <213> Homo Sapiens

| | |
|------------|-------------|
| <400> 56 | |
| ctgccacaca | aatagcaggg |
| ccagtcaagt | caaactctggg |
| tattttgtta | tactaaatga |
| aagaatgcac | cacaaaaaaa |
| ctctctggca | tcttaacagt |
| gccacataaa | cagatttcat |
| cagtgtatca | atataaatat |
| tttttcttac | tgacttggtg |
| caggagtagg | ccaccatttg |
| ccaacatgt | gcttttagatt |
| a | |

<210> 57
 <211> 601
 <212> DNA
 <213> Homo Sapiens

| | |
|-------------|-------------|
| <400> 57 | |
| tattgacctg | gtagcatatg |
| taaacctcct | tttaaagttt |
| gcatgtatga | caaattgtgg |
| tttttctatt | tgactaatat |
| ctttttgccg | gttggtgaaat |
| mctttttgtc | tgatcttgag |
| gttatttgtg | cttgaggatc |
| agagtagtac | ccactgggag |
| tatacttatt | ttaatgagtt |
| tgtttttagtg | tggtgatgga |
| a | |

<210> 58
 <211> 601
 <212> DNA
 <213> Homo Sapiens

| | |
|------------|------------|
| <400> 58 | |
| taggtttttt | ttctatttga |
| gcattaactt | tttgccggtt |
| tttactactt | ttttgtctga |
| ttttcttggt | atttgtgctt |
| tcgtcttaga | gtagtaccga |
| ygttacttat | acttatttta |
| aaatatctgt | tttagtgtgg |

```

atcattcattc ctagagttta cactctgggt ttgtaacctg catcaggagt ggctgcacag 480
gtagggacag gggagggtgg aggcctgggag agacaatatg tggggcttgg gtctctcattc 540
cccttcaaca agagcacctt ggtctctgtc tgatttgtaa ttgcttctgt acagcggaga 600
t 601

```

```

<210> 59
<211> 601
<212> DNA
<213> Homo Sapiens

```

```

<400> 59
gatatatttct tgttatttgt gcttggagtc ctgaatgaag gtgttttcaa gtagggctgc 60
atcttcgtct tagagtagta cccactggga gaccatctaa aaattatact aatttatccc 120
tgcacgttac ttatacttat tttaatgagt ttcataagac aagcaaaaac ttgaaagagc 180
ccaaaaatat ctgttttagt gtggtgatgg agtcatagtt gttgagcttg aaaaaatggg 240
agcaatcatt catcctagag ttacacact gggtttgtaa cctgcatcag gagggtctgc 300
rcaggtaggg acaggggagg tggtaggctg ggagagacaa tatgtggggc ttgggtctct 360
catcccttcc aacaagagca ccttggcttc tgtctgattt gtaattgctt ctgtacagcg 420
gagatagatt tatcacaatg taaatgagct tgagaggctc tttattttgt attatacctt 480
ctgcaacgtt atcagcttca ggacctcttt gttcatttga atgaagggtg catagctaata 540
gagctcagag gcaagaccag aggtgcctgg attcccaggc ctaggctctt tcctctgttc 600
t 601

```

```

<210> 60
<211> 601
<212> DNA
<213> Homo Sapiens

```

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<400> 60
tgagcttgag aggcctctta ttttgtatta taccttctgc aacgttatca gcttcaggac 60
ctctttgttc atttgaatga aggttgcata gctaattgagc tcagaggcaa gaccagaggt 120
gcctggattc ccaggcctag gtcttttctt ctgttctgtg ttctctctat aaaatgttgc 180
cataagtgaac ctgtgctgat ttgacaacac caagcgggtt cattctcttt ttctgttgt 240
aggagaagtt gaagatgaat tacttcatgc ctacagcaaa gtgtatacat tagacatccc 300
ycttctcatg gttcgctctg cagtccttgt ggcagtaaca ctaactgtgc ccattgtcct 360
cttcccagta agtacataag actttgatga aagaaacctt cttgaccca taaattagta 420
catgtgttct accttcattt tgatttaatt atagggtgag tttgcaattg caatgcctga 480
ggatattatt ttcttatagc attttgagtc acttaaaatt ggccatttaa tgtgtagata 540
gagcaagtag ttccagggtg tatttttata gtgtaggaaa aaaatcataa aacttatttt 600
t 601

```

```

<210> 61
<211> 601
<212> DNA
<213> Homo Sapiens

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<400> 61
aaacagttat gctatctatc acatatctct ctacacatg gcctctgcca gactcacacc 60
aggtcacccc tccttggcat ttgtcattgg tgtcagttt ttctgagatc ccagagcaga 120
gctggttagtg aagatttggg ctgtgtgagt taaaaccacc acctaaggat aaacacaggt 180
cttcaccctc ctgccagctc ctgtttcata aacactgaat ttactcattc atttgagggg 240
gaaaaaaata agtgacacag taaccagcac tgtcctggac ataatgttcc atacagggct 300
kgcatatgaa gactatttct ataatgacac tgtggtcact ttaaattgcag cttgtgtgct 360
gaaatatatt ttggcacatt ctttttcat gaggcatga aatcagatcc gtactactat 420
ggtggctaata attttactct taaatcatgt cttgcctcta atatatctga aagtatttca 480
gatgacatac acatagcttt agcctaaaat cagctccgtc ttgggtacaa gacagaagac 540
aactataaac agaagggtata ctagagggtg aaattgccag gcaaacaact tcaactgagaa 600

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a

601

<210> 62

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 62

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tgagaaataa agcactgata taaatctgac catcaggaac agcaatagtg tgtaaacatt 60
agatgccatt agaaccaaaa ttgaccataa gaaccagagt tcagaaaaat gactaactgc 120
tgctcctcat tatgtatttc cactcaacat tagcatttat gaaacatttt gcacattatc 180
ctgtcctcac ccttgcaatg ttacatttat ataatctgtg taagtgtccc actgccccac 240
agagtcataa gtccttgga cttgggtgat tgcacagtga ctggcacaga ggggtgagctc 300
ygtcgtgctt ggggaagaaaa atggctctca aatgaatctt gccttgtctt gaaatgtata 360
aactgccttt tctagcaaaa gcatagacac tctttccctt ggtgacatgt gctacgaatt 420
cagctggggt gaggatctgg gctaaatgaa ccaaaccctc ctatacatga aggatacaca 480
gagatgggtg cagagagtgg tcacttccgt gagtggatct caatcaagtc ctctgaagct 540
aaattcaatt ttttttcttt actaaaatga taaaagttgt tattggcgct tttgcttggt 600
t
601

```

<210> 63

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 63

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aaataaagca ctgatataaa tctgaccatc aggaacagca atagtgtgta aacattagat 60
gccattagaa ccaaaattga ccataagaac cagagttcag aaaaatgact aactgctgtc 120
cttcattatg tatttccact caacattagc atttatgaaa cattttgcac attatcctgt 180
cctcaccctt gcaatgttac atttatataa tctgtgtaag tgctccactg cccacagag 240
tcataagtc ctgggacttg gtgatgtgca cagtgactgg cacagagggg gagctctgtc 300
rtgcttggga agaaaaatgg tcttcaaag aatcttgctt tgtcttgaat tgtataaact 360
gccttttcta gcaaaagcat agacactctt tccttgggtg acatgtgcta cgaattcagc 420
tggttgagg atctgggcta aatgaaccaa acctccctat acatgaagga tacacagaga 480
tggtgacaga gagtgggtcac ttccgtgagt ggatctcaat caagtcctct gaagctaaat 540
tcaatttttt ttctttacta aaatgataaa agttgttatt ggcgcttttg cttgtttatt 600
t
601

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<210> 64

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 64

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caatagtgtg taaacattag atgccattag aaccaaaatt gaccataaga accagagttc 60
agaaaaatga ctaactgctg tcttccatta tgtatttcca ctcaacatta gcatttatga 120
aacattttgc acattatcct gtccctaccc ttgcaatgtt acatttatat aatctgtgta 180
agtgtccac tgccccacag agtcataagt cctgggact tggtgatgtg cacagtgact 240
ggcacagagg gtgagctctg tcgtgcttgg gaagaaaaat ggtcttcaa tgaatcttgc 300
yttgtcttga aatgtataaa ctgccttttc tagcaaaagc atagacactc tttcccttgg 360
tgacatgtgc tacgaattca gctgggttga ggatctgggc taaatgaacc aaacctccct 420
atacatgaag gatacacaga gatggtgaca gagagtgggc acttccgtga gtggatctca 480
atcaagtcct ctgaagctaa attcaatttt ttttctttac taaaatgata aaagttgtta 540
ttggcgcttt tgcttgttta tttcgtataa cttagggctc agattttcaa tgtgtcaaat 600
g
601

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<210> 65

<211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 65
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 tcataagtcc ctgggacttg gtgatgtgca cagtgactgg cacagagggt gagctctgtc 120
 gtgcttggga agaaaaatgg tcttcaaagt aatcttgccct tgtcttgaaa tgtataaact 180
 gccttttcta gcaaaagcat agacactctt tcccttggtg acatgtgcta cgaattcagc 240
 tgggttgagg atctgggcta aatgaaccaa acctccctat acatgaagga tacacagaga 300
 wggtgacaga gagtgggtcac ttccgtgagt ggatctcaat caagtcctct gaagctaaat 360
 tcaatttttt ttctttacta aaatgataaa agttgttatt ggcgcttttg cttgtttatt 420
 tcgtataact tagggctcag attttcaatg tgtcaaatgc tgactcacag catgggtctc 480
 ctgacagttt atttcattta aggaactctt caccagtaag tttatttact tgccttgata 540
 tctccacaca ttaataataa aactaacaaa acctaatctg aattaaaaatc tatcagcttt 600
 a 601

<210> 66
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 66
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 ggcgcttttg ttgtttattt cgtataactt agggctcaga ttttcaatgt gtcaaagtct 180
 gactcacagc atgggtctctc tgacagttta ttctatttaa ggaactcttc accagtaagt 240
 ttattttactt gccttgatat ctccacacat taataataaa actaacaaaa cctaactctga 300
 rttaaaatct atcagcttta ggcattattt tgtgttctcc ttctttcaac atggtaactg 360
 ggctctcttt cttaggagct tgagaagata tgactgggtt ttgtttttct ctacttcatt 420
 tattatcttt cttttttcca atcaggttag ttttttccct tttagtataa ggtgcatagt 480
 aactgcttgt agtatttgtt gaacaagtga ataaatgaaa tgaattaagg tagtgttttc 540
 actagcagcc caacattttt ttctctctta gtagtgggtg gggatcagc tatggaatgg 600
 c 601

<210> 67
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 67
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 ggtgggggtat cagttatgga atggcacctc cttccagagg actgatcatg tcattttcag 120
 cttatgcttc cctttatgca gtaaagtctc catattttcca taaagaacaa gaaaccaa 180
 aatcctaatt gatataataa gaacacacag atgaaaattt cacctgccat gcctttgaaa 240
 aaagatccct agctacttgt atttcatctt ataattaaaa tcagtctttt cacttatgtt 300
 ktcttcagat ctctgtttt gaagtgtata tagatatcaa catagaaatg cagcgatat 360
 tgctatcaac tgcagtggag cagtgattcg taggttttcc aacatccttg ccttaagcaa 420
 acctgcaaaa tcaaagtgtg agctacgtct aaacaatggg agaggctttt tttttttttt 480
 taagagttag aactaagact ctacttccct cctgtgcctc cacatttttg accttcacat 540
 tgggcccctg catcagaata cagcaccctc taacaggctc ctgttcagga ctctttctct 600
 g 601

<210> 68
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 68
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 gtgggggtatc agttatggaa tggcacctcc ttccagagga ctgatcatgt cattttcagc 120
 ttatgcttcc ctttatgcag taaagtttcc atattttccat aaagaacaag aaaccaaata 180
 atcctaattg atataaatg aacacacaga tgaaaatttc acctgccatg cctttgaaaa 240
 aagatcccta gctacttgta tttcatctta taattaaaat cagtcttttc acttatgttt 300
 ycttcagatc tctgtttttg aagtgtatat agatatcaac atagaaatgc agcgtatat 360
 gctatcaact gcagtggagc agtgattcgt aggttttcca acatccttgc cttaagcaaa 420
 cctgcaaaat caaagtgtga gctacgtcta aacaatggga gaggtttttt tttttttttt 480
 aagagttaga actaagactc tcaattcctc ctgtgcctcc acatttttga ccttcacatt 540
 gggcccttgc atcagaatac agcaccctcc aacaggctcc tgttcaggac tctttctctg 600
 g 601

<210> 69
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 69
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 gacttgtgtc agtaaagaaa aaggcacata gctaagtggga agagcagatg aggcttgggtg 120
 ggaatcagcc agtgggtctgc cctagcaaaag gtaaacagaa ctgctggggg cttttggtcc 180
 taggtcact actcagggag gcactttaac atggaatgac cagcaagttt ccttcctgat 240
 cttttccacc accaccacaa gcttagtacc tccctccctc tttgctctgt tgctctcttc 300
 rggaatgcac tggaaaccac cttcagttct gtttggaaat ttctattcc ttattcagaa 360
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 gtgatctcat atcattagga caaatgttaa tctttctggg agccaggaga ctgctttcac 480
 attcagagga cctggacata taggactgcc tctaactcac tctaactcag cttattgact 540
 tgaatgcacc tttttaacaa gtgactaaaa aacaaactgt gactattctc tgaaaatgag 600
 c 601

<210> 70
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 70
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 ggggcttttg gtcctaggct cactactcag ggaggcactt taacatggaa tgaccagcaa 120
 gtttccctcc tgatcttttc caccaccacc acaagcctag tacctccctc cctctttgct 180
 ctgttgctct cttcggaat gcactggaaa ccaccttcag ttctgtttgg aattttccta 240
 ttcttatttc agaaagagga agaagctttt gcatttact caaccgttct acctattatt 300
 sccataaact ttctgtgac tcatatcatt aggcctaatg ttaatctttc tgggagccag 360
 gagactgctt tcacattcag aggccttggga catataggac tgctctaac tcaactaac 420
 tcagcttatt gacttgaatg cactttttta acaagtgaact aaaaaacaaa ctgtgactat 480
 tctctgaaaa tgagcctata tctcatactt atttattctg tttaacactg tgaaacaaat 540
 taagtctctt ggcactatgt atataccata aaaagcttat ttgtaagcct actaattgga 600
 c 601

<210> 71
 <211> 601
 <212> DNA
 <213> Homo Sapiens

<400> 71
 cctagtacct cctccctct ttgctctgtt gctctcttcg ggaatgcact ggaaaccacc 60

| | | | | | | |
|------------|-------------|------------|------------|------------|-------------|-----|
| ttcagttctg | tttgggaattt | tcctattcct | tattcagaaa | gaggaagaag | cttttgcatt | 120 |
| tactccaacc | gttctaccta | ttattcccat | aaactttctg | tgatctcata | tcattaggcc | 180 |
| aaatgttaat | ctttctggga | gccaggagac | tgctttcaca | ttcagaggcc | ctggacatat | 240 |
| aggactgcct | ctaactcact | ctaactcagc | ttattgactt | gaatgcacct | ttttaacaag | 300 |
| ygactaaaaa | acaaactgtg | actattctct | gaaaatgagc | ctatatctca | tacttattta | 360 |
| ttctgtttta | cactgtgaaa | caaattaagt | cctctggcac | tatgtatata | ccataaaaaag | 420 |
| cttatttgta | agcctactaa | ttggaccagt | tttgacaata | ttgaataagc | actaattgca | 480 |
| gatcataatg | tagaattata | ggctgctgag | gaaaacaata | tcacaccatt | tgctttcctc | 540 |
| agtttccttt | tcagaatgag | tttcataatg | ttcactaatc | caatttttaa | aatcctttac | 600 |
| a | | | | | | 601 |

<210> 72

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 72

| | | | | | | |
|------------|------------|-------------|------------|-------------|-------------|-----|
| aaccgttcta | cctattatct | ccataaaactt | tctgtgatct | catatcatta | ggccaaatgt | 60 |
| taatctttct | gggagccagg | agactgcttt | cacattcaga | ggccctggac | atataggact | 120 |
| gcctctaact | cactctaact | cagcttattg | acttgaatgc | acctttttta | caagtgacta | 180 |
| aaaaacaaac | tgtgactatt | ctctgaaaat | gagcctatat | ctcactactta | tttattctgt | 240 |
| ttaacactgt | gaaacaaatt | aagtcctctg | gcactatgta | tataccataa | aaagcttatt | 300 |
| ygtaagccta | ctaattggac | cagttttgac | aatattgaat | aagcactaat | tgcatgatcat | 360 |
| aatgtagaat | tataggtctg | tgaggaaaac | aatatcacac | catttgcttt | cctcagtttc | 420 |
| cttttcagaa | tgagtttcat | aatgttccact | aatccaattt | ttaaaatcct | ttacaaagtt | 480 |
| attctttaa | tatttccaga | gactatctgg | tttgtcattc | tagaaatgaa | attgcctttt | 540 |
| cagcctaaac | agatggcctt | aatttttggg | ggagtgggat | gaaaggaatg | tcacatgaga | 600 |
| a | | | | | | 601 |

<210> 73

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 73

| | | | | | | |
|-------------|-------------|------------|-------------|------------|-------------|-----|
| tatccagtta | cagcagcgta | acttgagcag | ctgctgcaaa | ctgaggctct | cttgaccctt | 60 |
| cgcctactta | tttcagctgc | taaaataggg | ctgaaatctg | tcaaggatcc | tgaagggaag | 120 |
| gataagattc | ctactattca | atttaattta | agcttttatt | cagtgcctgc | tgtgtgcaca | 180 |
| acactaagct | agaaagtctg | aggaatgttt | agattattag | gtcctgttcc | ttgcctttca | 240 |
| tagattttaca | atctattgat | agggagagct | aaaaaggaga | gaaagaggaa | ggagcaaaaca | 300 |
| yaaaaacgtc | aaaattttta | aataccattt | taaaatttta | ttttaaaatg | ttaaaatacca | 360 |
| tgcaaaaatta | aggaaaacct | agattcataa | aaattccctt | cacaatcttg | tgtaaatcaa | 420 |
| ttcagtgcct | gcccttaaatg | tctcatccag | tctgatgaga | catgttttgt | gatcaacaag | 480 |
| ggttttacta | tgtttcttaa | ttatgtgtct | tgccgtgttat | ctctttctga | ccgagattat | 540 |
| ttttaacaat | aaattctgaa | aactaagaaa | gtgaaagcat | aaaatattgt | cttataaaaat | 600 |
| a | | | | | | 601 |

<210> 74

<211> 601

<212> DNA

<213> Homo Sapiens

<400> 74

| | | | | | | |
|-------------|------------|------------|------------|------------|------------|-----|
| aaaaacgtca | aaatttttaa | ataccatttt | aaaattttat | tttaaaatgt | taaataccat | 60 |
| gcaaaaattaa | ggaaaacctt | gattcataaa | aattcccttc | acaatcttgt | gtaaatcaat | 120 |
| tcagtgcctg | cccttaaatg | ctcatccagt | ctgatgagac | atgttttgtg | atcaacaagg | 180 |
| gttttactat | gtttcttaat | tatgtgtcct | gcctgttatc | tctttctgac | cgagattatt | 240 |

| | | | | | | |
|------------|-------------|-------------|-------------|------------|------------|-----|
| tttaacaata | aattctgaaa | actaagaaaag | tgaaagcata | aaatattgtc | ttataaaata | 300 |
| sgccaaggaa | aaaatgacac | tccatttcaa | atatcaaaaag | ttagcatcaa | gactgcacaa | 360 |
| gatgaatgta | cagtcattgtg | ttgcttataa | atgtggacat | attctgagaa | atgcatcttt | 420 |
| aggcaatttt | gtcattgtgc | aaacaccata | gattgtactt | gcagccta | tggtggagcc | 480 |
| tactatacac | taaggctata | tgccatagcc | tagtactcct | aggctacaaa | cctgtacagc | 540 |
| atgttactgt | actgaatagt | ggaggtacct | gtaacataat | ggtaagtatt | tgtgtctcca | 600 |
| a | | | | | | 601 |

<210> 75
 <211> 601
 <212> DNA
 <213> Homo Sapiens

| | | | | | | |
|------------|------------|-------------|------------|------------|------------|-----|
| <400> 75 | | | | | | |
| agtactccta | ggctacaaac | ctgtacagca | tggtactgta | ctgaatagt | gaggtacctg | 60 |
| taacataatg | gtaagtattt | gtgtctccaa | acgtagaaaa | gctactgtaa | aaatacagta | 120 |
| ttacaacctt | agggtatcac | tgtcttata | gtggtctgtt | gttgaccgaa | atgactatgc | 180 |
| ttaataccac | tgaactgtac | acttaaaaa | gggttaagat | gtaaattcta | tgttatgtat | 240 |
| gttttataat | aataaaaaaa | ttgaaaaaa | catcaacatc | ttttctggga | aaaaagaaaa | 300 |
| rgaaagaaaa | tgcattagag | tgatgagaat | atttgaagta | atagataaag | tcaaaaaaaa | 360 |
| agaaatgatc | ttgcctttga | actttcttgt | ttaagattcg | tacatcagt | atcacactgt | 420 |
| tatttcccaa | acgacccttc | agctggatac | gacatttcct | gattgcagct | gtgcttattg | 480 |
| cacttaataa | tggtctgggc | atccttgtgc | caactataaa | atacatcttc | ggattcatag | 540 |
| gtgagtttca | gaaaggcttc | aatttgggtca | acccaaactc | acgcctcatt | aaatgatgga | 600 |
| c | | | | | | 601 |

<210> 76
 <211> 601
 <212> DNA
 <213> Homo Sapiens

| | | | | | | |
|------------|------------|------------|------------|-------------|-------------|-----|
| <400> 76 | | | | | | |
| ggtttattta | aagtgtgtgc | tggtatctcc | tttgctagga | actgctgggt | aagacattga | 60 |
| ccttgccctg | tggttgcctt | ctcaggggct | tcttctgcca | ctatgctgat | ttttattctt | 120 |
| ccagcagttt | tttatcttaa | acttgtcaag | aaagaaactt | ttaggtcacc | ccaaaagggtc | 180 |
| ggggtaagta | aaccttgcaa | tttcccccat | tattagtgtg | tcttccaact | acttagaata | 240 |
| aactagaaaa | tacacatagt | tcagaaaaat | gaatcaatgt | acaagaacca | aaaatcaaaa | 300 |
| mtgggctaga | actttctggg | agcagagaaa | ggggacatat | ttctgaaact | caaatgattc | 360 |
| tacttcaaat | atcaaatatc | ctgtgttgag | tctgtcatat | atgtcaaaata | gtagtagcct | 420 |
| ttcccacaga | cacatatgct | tcaggcaa | agcagtgctc | aataccaagc | tgctgttgtg | 480 |
| ctatccgtgg | aaaatcatgc | aagaaggaat | taggtccct | agcgggtgta | tggaataatt | 540 |
| taaatatttt | ggtcatggtt | gttaggtttg | caaagccaaa | ggaaagatgt | tgcttttgtt | 600 |
| t | | | | | | 601 |

<210> 77
 <211> 601
 <212> DNA
 <213> Homo Sapiens

| | | | | | | |
|------------|------------|------------|------------|------------|------------|-----|
| <400> 77 | | | | | | |
| cttttatggt | tagtttgaaa | gaatccattg | aagatagaaa | atgagagaat | agaagaaacc | 60 |
| tgagaatagt | aaaataaaga | gcagagaaaa | tatgggggca | gggaaaacat | gtgagtgtta | 120 |
| aggattgatt | atgaatgaac | gattaggggg | attgatggat | cacagggtta | gtatatgctt | 180 |
| aactttataa | gaaacttcca | catagttttc | cacagtgttt | ctaccatttt | catttccacc | 240 |
| cgtactacct | acaacttcca | ctgactccac | agccctgcca | acatttggtg | ttgtcttttg | 300 |
| yattttagcc | tttctagtgg | gtctgaaatg | gtaactcatt | gtgattttca | ttcttgcttc | 360 |
| tgtgacaact | aatgttgaaa | acttttcaag | tgtttaatgg | tactcatat | atcttctttt | 420 |

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gtgaagtgtg tattcaaata ttttgcccat ttttaaaatt taggttatgt gttttttattg 480
gggtatttgta gaagctcttt aaatatggat ccatgtccag attgccaata ttttttccca 540
gtctatggta tggttgctta ttttcctaaa ggtgtcttaa ttacatcttt ctggggccag 600
g 601

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<210> 78
<211> 445
<212> DNA
<213> Homo Sapiens

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<400> 78
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catatatctt cttttgtgaa gtgtgtattc aaatcttttg cccattttta aaatttaggt 120
tatgtgtttt tattgggtat ttgtagaagc tctttaaata tggatccatg tccagattgc 180
caatatattt tcccagtcta tggtaggtt gcttattttc cttaaagggtg ctttaattaca 240
tctttctggg gccaggtcac catagctcaa agttttgcaa tttatgtctt aatgagataa 300
wattaatcag agtggatatag tcaaaattaa atgttttgat gtcctgggcc catataggta 360
ggactggatc atctaaccac gatgcaaaaa aaaaaaaca aaaaaacaaa aatagtactt 420
ggaaaaaactt attttaaat aaaca 445

```